In the Claims:

Please amend original claims 1-7 as follows:

Claim 1 (currently amended) A process ~~Process~~ for the production of high-purity 1,2-dichloroethane using a circulating stream of liquid reaction fluid which mainly consists of 1,2-dichloroethane and a catalyst, in which at least ethylene and chlorine are admixed to the reaction fluid, ~~characterised in that~~ wherein

- a gas stream with chlorine as the main constituent is dissolved in a portion of the reaction fluid, which is essentially free of dissolved ethylene,
- the gaseous constituents non-dissolved in this solution, being removed from the said solution by means of a centrifugal gas separator as device for gas separation and
- the solution freed from non-dissolved gas constituents being brought into contact with solute ethylene supplied for this purpose.

Claim 2 (currently amended) The process ~~Process~~ according to claim 1, ~~characterised in that~~ wherein at least part of the gaseous constituents that have been removed from the chlorine-containing solution by the gas separator are admixed to the reaction fluid at a point of the reaction section, the reactor or a dissolving device, in which the reaction of chlorine with ethylene for forming 1,2-dichloroethane has almost terminated or can no longer take place.

Claim 3 (currently amended) The process ~~Process~~ according to claim 2, ~~characterised in that~~ wherein the gaseous constituents which have been removed from the chlorine-bearing solution by the gas separator are admixed to the reaction fluid downstream of the reaction section in which the chlorine reacts with the ethylene to yield 1,2-dichloroethane.

Claim 4 (currently amended) The process ~~Process~~ according to claim 1, ~~characterised in that~~ wherein at least part of the gaseous constituents removed from the chlorine-bearing solution by means of the gas separator are fed to a facility for secondary reaction, this facility being operated at a lower temperature than applied to the main reaction.

Claim 5 (currently amended) The process ~~Process~~ according to claim 1, ~~characterised in that~~ wherein at least part of the gaseous constituents removed from the chlorine-bearing solution by means of the gas separator are fed to a facility for the incineration of residues without rendering inert.

Claim 6 (currently amended) The process ~~Process~~ according to claim 1, ~~characterised in that~~ wherein at least part of the gaseous constituents removed from the chlorine-bearing solution by means of the gas separator are fed to a chlorination facility.

Claim 7 (currently amended) The process ~~Process~~ according to claim 6, ~~characterised in that~~ wherein the chlorination facility serves to convert light ends from a plant for monomer vinyl chloride production from 1,2-dichloroethane to heavy ends.